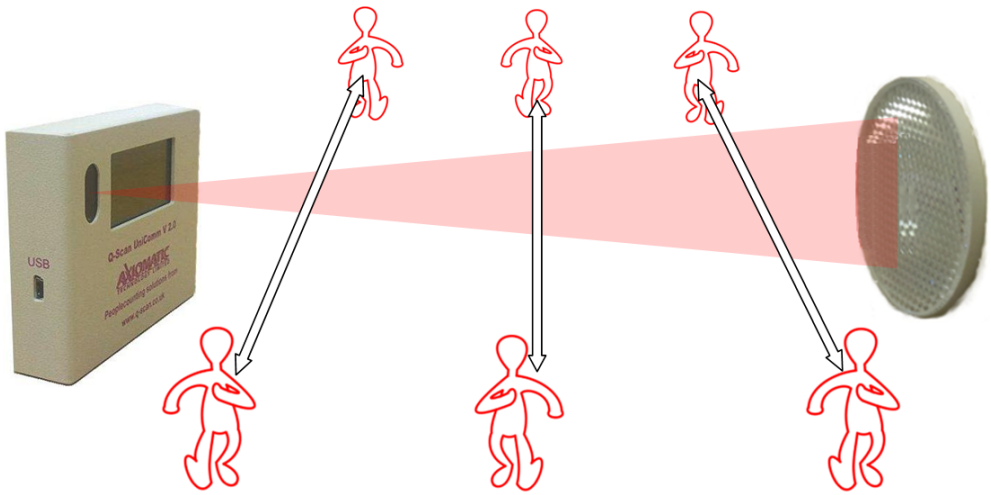
Q-Scan UniComm V2.0

User Manual

Q-Scan People Counters



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1 Before You Start

We strongly advise that you read the installation and operating instructions before attempting to use the equipment.

Correct positioning and setting up is important. A little time spent here will ensure that the unit gives you years of trouble-free operation. In some cases a temporary installation, for test purposes, is recommended.

1.1 Package Contents

Thank you for purchasing a *Q-Scan UniComm V2.0*. Your package contains a ***Q-Scan UniComm V2.0*** **People Counter, Manual, 12V Power Supply, Reflector, two 'AAAA' Batteries** and a **Remote Control**. If you have the SD card version, you will also have an **SDHC card**.

1.2 Location

Choose a location where people move freely so that undue obstruction of the beam is avoided. If possible a minimum distance of 30cm should be maintained between any passing person and the Q-Scan People Counter and the overall distance between Q-Scan People Counter and Reflector must not exceed 6 meters. The ideal mounting height for counting legs is 12cm to 15cm from the floor to the bottom of the Q-Scan People Counter and at chest level (0.8m – 1.5m) for counting bodies. The latter will avoid arms and handbags etc. from being counted. Never locate the system in direct sunlight and areas with highly reflective surfaces.

Please be aware that some automatic door sensors can emit Infra-Red light and may interfere with the *Q-Scan UniComm V2.0* (**see section 5.3** *IR Interference* on page 12).

1.3 Fixing Surface

For temporary installation you may wish to use items like “Blu-Tack” or “double sided foam tape” but the equipment **must** eventually be securely fixed to an **even** and **smooth** permanent surface. Rough or uneven surfaces may cause internal damage, and may distort housing and will almost certainly affect the accuracy of the system.

1.4 Remote Control for Q-Scan UniComm V2.0

Function	*Used for*
Up	Moving up to the menu item above; scrolling up through the footfall data
Down	Moving down to the menu item below; scrolling down through the footfall data
Right	Moving to the choice on the right; Scroll to next day's footfall data
Left	Moving to the choice on the left; Scroll to previous day's footfall data
OK	Select the current choice
Back	Go to previous menu
Power	Revert to standby mode
*****	Reserved for future functionality

Should you require replacement batteries for your remote, the unit uses two 'AAA' batteries.

2 Modes of operation

There are three modes of operation:

2.1 Live Counting Mode

This is the mode that the Q-Scan People Counter will spend most of its time in. In fact, it is in this mode all of the time that the unit is unattended. It will quietly get on with the task of counting, and recording the footfall data in memory. It will optionally display the counts on the screen, which may be dimmed down to be unobtrusive.

2.2 Menu Mode

This is when you are using the menus with the remote control to browse through settings and footfall data. Typically, the screen will be brighter in this mode to make it easier for you to view the footfall data. Provided that you don't stand directly in front of the unit and break the beam, it will continue to count.

2.3 Beam Strength Mode

This mode allows you to adjust the strength of the transmitted beam, and monitors the strength of the reflected beam. You will need this to align the reflector correctly.

The unit will not count in the *'Beam Strength'* mode.

This allows the user to see a screen with 2 bars on (***See section 3.2 and figure 4***) and allows the user to adjust the Infra-Red *'Beam Strength'*. Changing the *'Beam Strength'* can help to adapt the *Q-Scan People Counter* to different environments and locations.

We recommend using the weakest beam strength to reduce interference, unwanted reflections and power consumption.

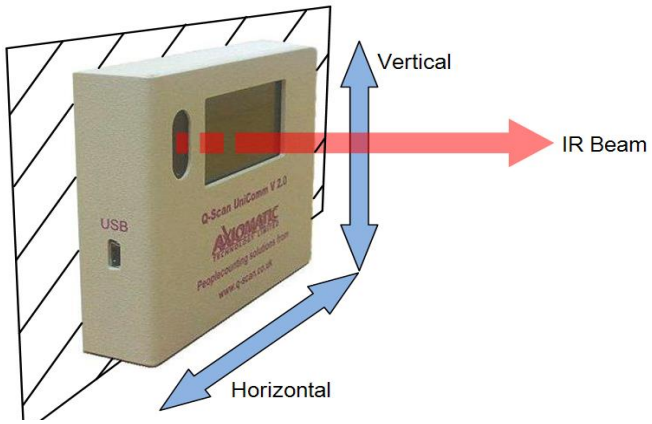
3 Installation

3.1 *Q-Scan People Counter* Installation

3.1.1 Choosing the ideal location for the *Q-Scan UniComm* V2.0

- Taking into consideration its surroundings and the opposite wall or surface for the *Reflector* to be located. Temporarily fix your *Q-Scan UniComm V2.0* to the desired location and power up the unit *(see figure1).*
- Choose a location that will not become permanently blocked or where objects may be moved in front of the beams.
- Confirm that the location has a smooth flat surface and is rigid. It is best if the surface face is perpendicular to the opposite wall where the *Reflectors* will be fitted, any slight angles in the wall may project the *Q-Scan UniComm V2.0* beam either side of the desired position.
- Ensure there is sufficient room on the opposite wall to mount the *Reflector*.
- Ensure there are no other reflective items or objects opposite the *Q-Scan UniComm V2.0* that could possibly reflect the beam back, e.g. Mirrors, Silver Ornaments, Glass, Christmas Decorations (tinsel) etc.
- Ensure there is a mains power socket close by. A 2 metre power cable is supplied. *Low Power Extension Cables* are available if necessary. Please contact *Axiomatic Technology Ltd* for availability stating the length required.
- A typical mounting height for the *Q-Scan UniComm V2.0* is approx 1 meter from the floor but the unit can be mounted higher to omit children or lower if required with the *'Leg Counting'* option enabled from the *'Counting Menu'*. Please do not install the Q-Scan People Counter below 12cm from the floor as the unit will miss-count due to people walking over the beams.

figure 1

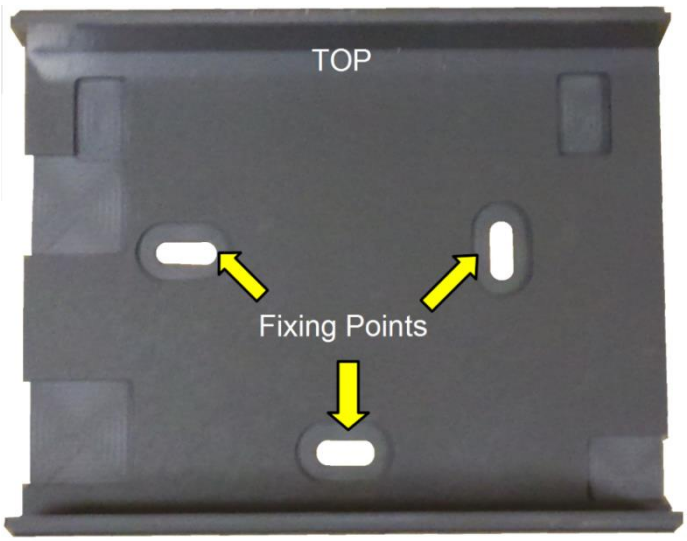


3.1.2 Fitting the *Q-Scan People Counter*

- Remove the front cover of the Q-Scan People Counter by gently lifting the sides out of the base grooves (*see figure2*) and separate the two halves, avoiding contact with any of the components. The circuit board should stay slotted into the lid as the lid is removed. Just above the arrows are two small slots. You can use a small screwdriver in these to get started.
- Take the base of the Q-Scan People Counter and using the small holes, fix to the wall in your desired location, making sure it is fixed securely (*see figure 3*).
- Avoiding contact with any of the components, using the grooves in the front cover as guides, slide the cover back on to the base and press until it clicks into place and is fully seated. Check that the cover and the base have fully interlocked and if necessary press both sides in until they do.

figure 2

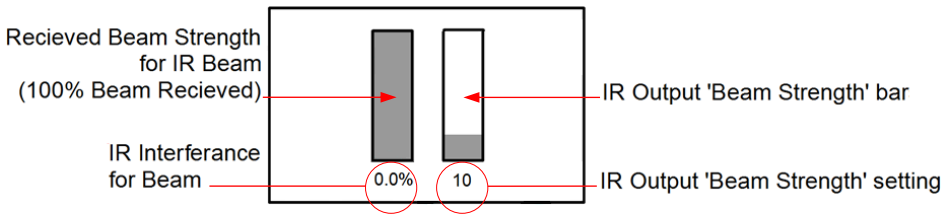
figure 3



3.2 Reflector Positioning

Check that the supplied mains adaptor is connected to the mains and switched on. Using the supplied remote control, go to the *'Beam Strength'* option in the *Q-Scan UniComm V2.0* menu and set the *'IR Power'* to 10 *(see figure 4)*

figure 4



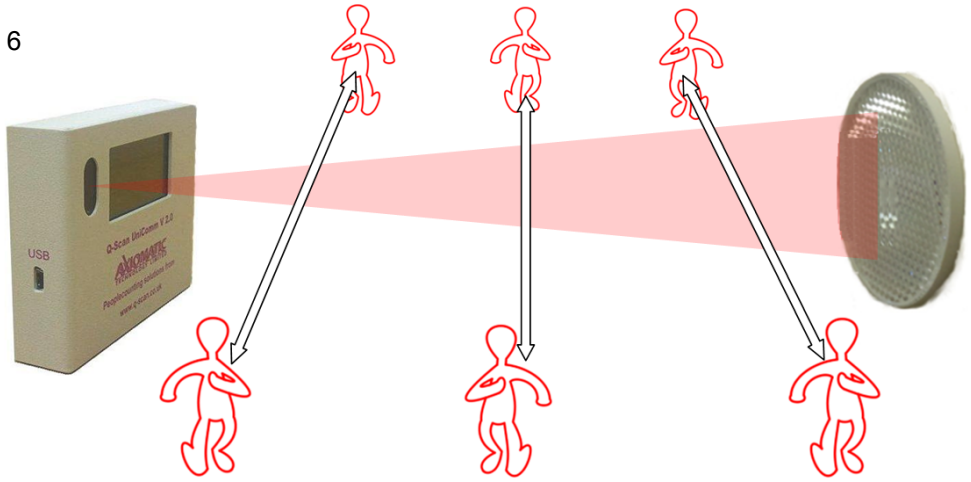
3.2.1 Find a Suitable Location for the *Reflector* on the Opposite Wall

- Whilst holding *Reflector* against the opposite wall and looking at the *Q-Scan UniComm V2.0 'Received Beam Strength'* bar for the *IR Beam,* move the *Reflector* up/down/left/right to get the feel of where the *IR Beam* is projected and mark this location.
- The ideal position for the *Reflector* is such that the '*Indicator'* bar in the *'Beam Strength'* screen reads almost full.
- The ideal *'Beam Strength'* is the lowest power that will achieve the above.
- If the ideal location of the *Reflector* cannot be found, then the *Q-Scan UniComm V2.0* may need to be moved slightly to the left or right.
- If the *'Received Beam Strength'* bar is flickering rapidly check the *IR Output* power and increase as necessary in steps of 5. The best performance for your Q-Scan People Counter is not to have full *IR Power* as the higher power can reflect *IR* from other objects (e.g. A persons reflective jacket, this would have the effect of miss-counting). In the '*Beam Strength'* screen use the Up/Down buttons on the remote to adjust the *'IR Power'* output, but **remember to press 'Enter'** on the remote to save the new setting.
- The ideal positions for the reflector should be in line with the beam of the *Q-Scan UniComm V2.0* at equal heights.

3.3 Testing the Alignment

- Test the unit by choosing *'Live Counts'* from the menu (*'Reset Counts'* if necessary) and walk *'In'* and *'Out'* of the entrance 10 times, varying your distance from the counter, to see if the *Q-Scan UniComm V2.0* counts correctly.
- If the *Q-Scan UniComm V2.0* fails to count a total of *20 'Passes'* with this test, then check the Reflector alignment set up and try again, repeat alignment set up if necessary.
- For best results, please fully test by walking through the entrance on the near and far sides to the *Q-Scan UniComm V2.0 (see figure 6).*

figure 6



3.4 Beam Counter Limitations

Beam Counters are a cost effective way of getting basic footfall trends, they should not be expected to achieve accuracy of more than 90%. The unit will not count two or more people walking side by side. The accuracy of beam counters is affected by the concentration and flow of customers past the beams, and will not count whilst the beam is blocked e.g. by an inward opening door, the wider the entrance, the lower the expected accuracy. They can also be affected by direct sunlight.

3.5 Advice with using Footfall Data

We advise that you perform manual count tests at different times with varied volumes of pedestrian traffic, after the installation is complete to highlight any difference between the manual count and the *Q-Scan UniComm V2.0* count. This average factor can be converted to a percentage which can then be applied to your daily summaries.

4 Menus

4.1 Main Menu

Live Counts	Displays the live counting screen
Reset Counts	Reset the displayed counts to zero. Does not affect the footfall data stored in the unit's memory
Settings Menu	All the things you can change
Beam Strength	Used to calibrate and align the count beam
Logs Menu	Used to view footfall data
Counter Details	Information about this counter
Contact Us	Axiomatic Technology contact details

4.2 Settings Menu

4.2.1 Display Menu

Blocked Mode - Choose the warning option you want your *Q-Scan UniComm V2.0* to display when the unit detects that the beams are blocked.

- **None** - No warning.
- **Message** - Screen will display '*BEAM BLOCKED*' at the bottom of the screen.
- **Screen** - Screen will display *'BEAM BLOCKED'* in text at the bottom of the screen then start to blink after 20 seconds.
- **Screen + Backlight** - Screen will display *'BEAM BLOCKED'* in text at the bottom of the screen then start to blink after 20 seconds along with the backlight flashing.

Backlight On/Off - Enable the backlight during *'Menu'* and *'Beam Strength'* modes.

Backlight Intensity - Adjust the brightness of the backlight. Range 0 to 10 for *'Menu*' and *'Beam Strength'* modes.

4.2.2 Standby Menu

Display Mode - Choose the display option you want your *Q-Scan UniComm V2.0* to display when the unit times out with no remote activity or after pressing the back button.

- **Q-Scan** - Displays the Axiomatic Technology splash screen.
- **Count** - Screen will display the total *'Pass'* count.
- **Command** - Screen content will be determined by USB/Ethernet commands.
- **Distributor –** Displays distributor splash screen if set.

Backlight On/Off - enable the backlight during *'Live Counts'* mode.

Backlight Intensity - Adjust the brightness of the backlight. Range 0 to 10 for *'Live Counts'* mode.

4.2.3 Date/Time Menu

Date - Set the current date, on the remote use *'up/down*' to change the date, *'left/right'* to change the day/month/year field.

Time - Set the current time, on the remote use *'up/down'* to change the time, *'left/right'* to change the hour/minute/second field.

Daylight Saving - Set to *'On'* to enable the daylight saving option.

4.2.4 Counts Menu

Divide By Two On/Off - The Q-Scan People Counter will automatically divide the total count by two giving an approximate figure for people who have entered.

Count Body/Leg

- **Body** - If the Q-Scan People Counter is mounted on the wall above 50cm then the *'Body'* option should be chosen.
- **Leg** - If the Q-Scan People Counter is mounted on the wall between 30cm and 50cm then the *'Leg'* option should be chosen.

Count Period - The Q-Scan People Counter can save the daily summaries for either 30 or 60 minutes periods.

Auto Reset On/Off - Enable or disable the *'Auto Reset'* feature, this will reset the display counts each day at a given time.

Auto Reset Time - Set the time to automatically reset the displayed footfall data each day, this does not affect the footfall data stored in the unit's memory.

4.2.5 SD Card Menu

NOTE: Only available for SD card enabled counters.

See *SD Card Uploads* section.

4.2.6 Input Menu

The Q-Scan UniComm V2.0 is able to accept pulses from external 3rd party counters, micro switches, or additional UniComm units. These additional counts can be independent from the UniComms own counts or added to them. Please contact Axiomatic Technology for further information about the accepted inputs and configuration of this function.

4.2.7 Output Menu

The Q-Scan UniComm V2.0 is able to Output pulses to external 3rd party counters, micro switches, or additional UniComm units. Please contact Axiomatic Technology for further information about the configuration of this function.

4.2.8 Restore Defaults

- Choose 'yes' to reset all settings to default.

4.3 Logs

There are 3 types of log that can be browsed: Daily Summary, Count Details and Events. Once you have chosen the data type you are interested in, you select a date using the *'up'* and *'down'* keys to change the date, and *'left'* and *'right'* to move between day, month and year. Then press *'enter'* to start browsing that day's footfall data. Having chosen a day, use *'up*' and *'down'* to scroll through the footfall data, and *'left'* or *'right'* to move to the previous or next day.

4.3.1 Daily Summary

The daily summary displays a *'Total'* footfall and a breakdown of activity with either 30 or 60 minute periods throughout that day.

4.3.2 Count Details

Choose a date to view and press enter on the remote. This screen gives you detailed information for the Time-Stamped Footfall.

4.3.3 Events

For some events, you can scroll to the event, and then get more details by pressing *'enter'*.

The possible events are listed below.

Event	***Description***	***More Details: Examples***
RESETC	The footfall counts have been reset.	<date / time> Counts reset: Manually
POWER	The counter has been powered on.	<date / time> Counter turned on
REBOOT	The counter has been rebooted.	<date / time> Counter rebooted
BLOCKED	The counter infra-red beam has been blocked for more than 20 seconds.	<date / time> Beam blocked
UNBLOCKED	The counter's obstruction has moved, therefore leaving the infra-red unblocked.	<date / time> Beam unblocked: Duration 01:40:15 (hh:mm:ss)
COMMS	The Comm port has been used for the first time.	<date / time> Comms started: USB
SETTINGS	A setting has been changed.	<date / time> Settings Changed: IR LED power = 40
DEFAULTS	Settings have been restored to their default values.	<date / time> Settings restored
TIMEDATE	The time and date have been changed. Viewing more details on this event will show the user what the previous settings were and what the new time and date settings are.	<date / time> Time/Date changed
HEARTBEAT	This will check that the counter is still active every 10 minutes. If the counter has been turned off, viewing more details on this heartbeat event will show how long the counter was alive for.	<date / time> Heartbeat NOTE: any new events will replace the last heartbeat.

4.4 Counter Details

This allows you to view the firmware version, serial number, flash memory size and type as well as USB settings.

5 Miscellaneous

5.1 Memory

If for any reason the unit loses power, the counts will be held in the memory for more than 5 years and up to 40,000 events can be stored. The counts will be displayed when the unit is powered on. The real-time clock is battery-backed, but will lose the time and date settings after 2 years without mains power. This battery will then need replacing to keep the time correct.

5.2 Beam Obstruction

If for any reason the system becomes obstructed for prolonged periods, the live counts screen (**as shown in 3.1)** will flash and display a beam blocked message. Remove the obstruction and the system will automatically return to counting mode. This event is stored in memory, and can be reported if the count data is downloaded using the Q-Scan Data Downloader software.

5.3 IR Interference

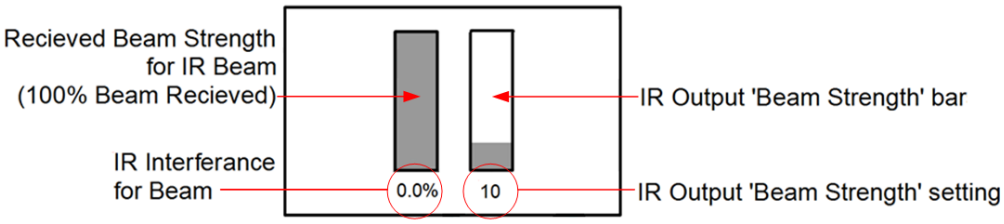
The percentage readings at the bottom of the *'Beam Strength' screen (see figure4)* indicate *IR Interference* received from the *Q-Scan UniComm V2.0* by other *IR* devices (such as Automatic Door Detectors), for best performance the *IR Interference* reading should read zero, but the device is able to ignore certain interferences at given levels, if the Interference level is permanently above 5% then a new location for the Q-Scan People Counter may be required.

In the unlikely event that your *Q-Scan UniComm V2.0* is experiencing excessive interferences from external *IR* devices, simply try re-locating the *Q-Scan UniComm V2.0* to the left/right or higher/lower to find a more suitable position with less interference.

Interference will also cause the remote control to lag slightly, this is normal.

The *Q-Scan UniComm V2.0* will report signals from the remote as interference, please refrain from using the remote when checking for other external interference.

figure 4


Recieved Beam Strength
for IR Beam
(100% Beam Recieved)
IR Interferance
for Beam
0.0%
10
IR Output 'Beam Strength' bar
IR Output 'Beam Strength' setting

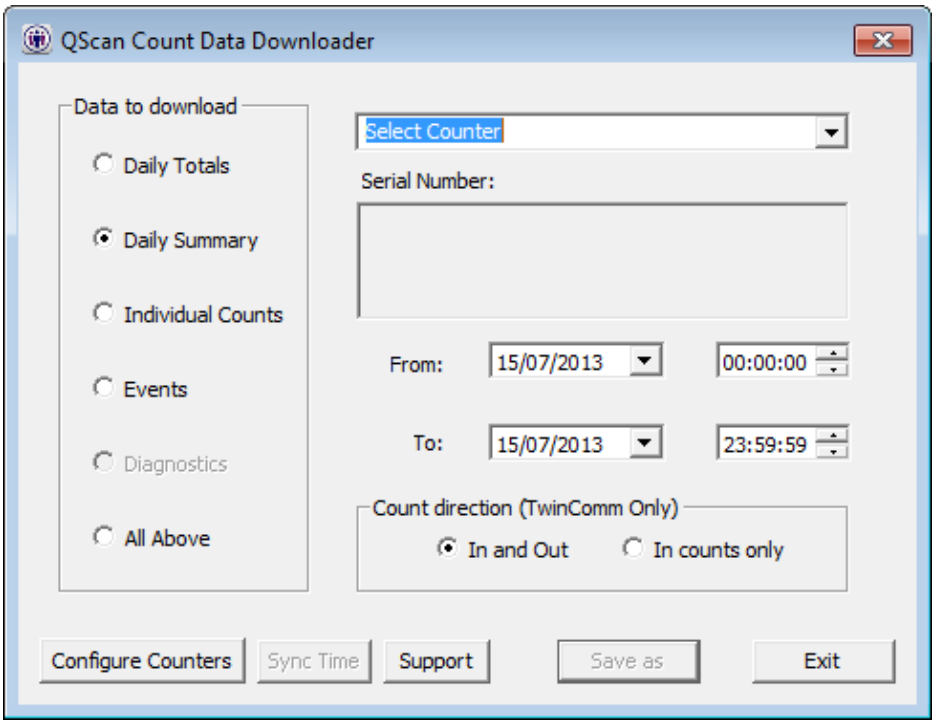
6 Q-Scan Data Downloader

6.1 Software Installation

The software is designed to be used with Microsoft Operating Systems; Windows XP, Vista or Windows 7/8. Please insert the supplied installation CD or SD card into your CD-ROM drive or SD drive and click install when the option appears. If the install option does not appear please open Windows Explorer and browse to the CD or SD card, find the file *'Q-Scan Software Setup v3.6.exe '* and double click to start the installation process. Please click *'allow'* if the 'User Account Control' feature asks if you want to allow this software to make changes to your computer. Follow the remaining steps to complete the installation.

6.2 First Use

The first time you use the *'Q-Scan Data Downloader'* you will notice the *'drop down menu'* at the top right instructs you to click the *'Configure Counters'* button in the bottom left of the window. This button is used to define the *Q-Scan People Counters* connected to your computer; the application will save these configurations between sessions for fast Footfall Data retrieval later.

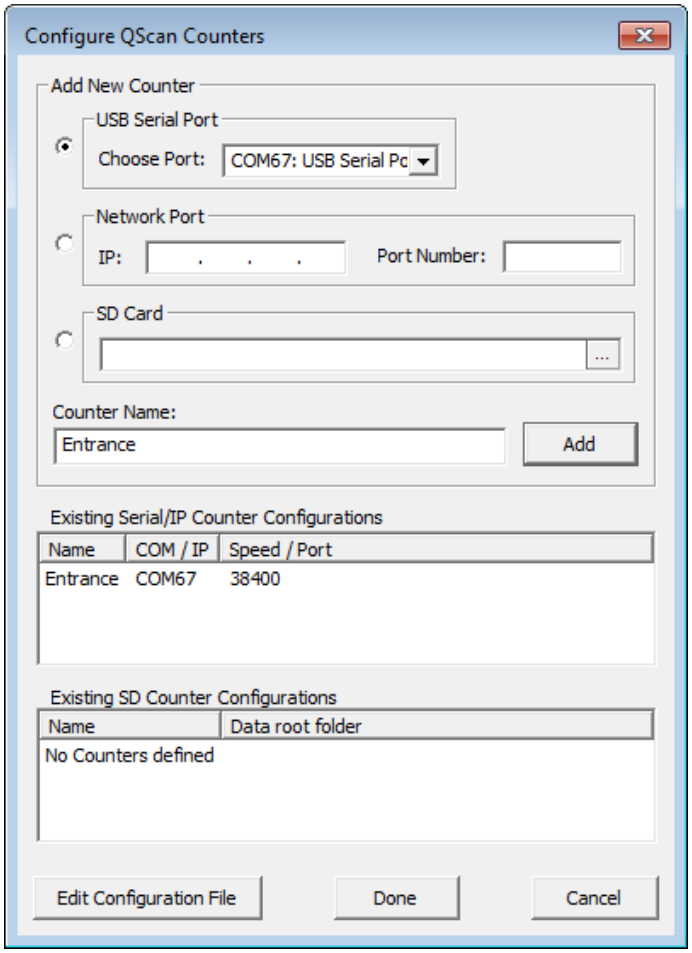


6.3 Configure a Counter

To configure a *Q-Scan People Counter* either choose a *'USB Serial Port'* if connected via USB cable, or enter the location of the data on the SD card if reading data from an SD card i.e. *<drive>*\QScan*<customer name>**<counter name>* - *See 7 SD Uploads* for more details.

.

Next give the *Q-Scan People Counter* a meaningful name then click *'Add'* and the *Q-Scan People Counter* will be added to the list of *'Existing Counter Configurations', c*licking *'Done'* will save any changes and return to the main display.



Note: The configuration file can be manually edited using the button in the bottom left of the window; this is useful if you wish to delete any previously configured *Q-Scan People Counters*.

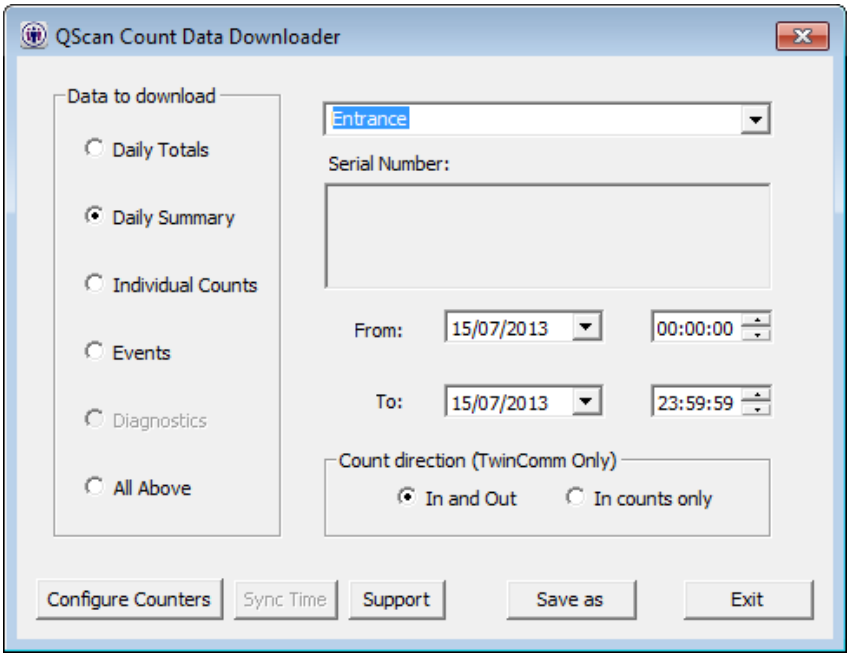
After one or more counters have been configured they will be listed in the *'drop down menu'*, which will prompt the user to *'Select Counter'* the next time *'Q-Scan Data Downloader'* is used. After selecting a *Q-Scan People Counter*, the software will check the connection to that counter and attempt to retrieve its serial number if applicable.

Note: If the counter is incorrectly configured, the software may display an error message and will also show that it was unable to retrieve the serial number from the *Q-Scan People Counter*.

6.4 Saving your Footfall Data

You can then choose the type of data to download, dates and times you are interested in and count direction. Clicking *'Save as'* will prompt you to choose a file name and location for the file, the application will have already created a default file name for you and will default to the location you last saved to (or My Documents as default)

.



The file created will be in *'Comma Separated Values'* or *'*.csv'* format. This can easily be imported into MS Excel or another spreadsheet application to create tables and graphs to view your Footfall Data.

6.5 Sync Time

You can Sync the Time of your Q-Scan UniComm V2.0 with a single click from the Q-Scan Data Downloader. Simply connect your Q-Scan UniComm V2.0 to the downloader via USB or Ethernet and click the 'Sync Time' button. This syncs the time of the PC you are currently connected to so it is advised that the time is checked on the PC before Syncing.

Alternatively the time can also be set using the remote control, directly on the Q-Scan UniComm V2.0 as explained in section 4.2.3 on page 10 of this manual.

7 SD Card Uploads

An SD card enabled Q-Scan counter is capable of uploading daily summary, monthly summary, event and count data to an SD card.

NOTE: Only SDHC cards with a FAT32 file system are supported.

7.1 Uploading

Before data can be uploaded to an SD card the **Counter Name** (required) and **Customer Name** (optional) need to be set. **Counter Name** and **Customer Name** are used when constructing the names of the various files (See below – *Files/Reports*). Both can be set in the *SD Card Menu* in the *Settings Menu* and can be a maximum of 16 characters each. By default the **Counter Name** is set to the counter's serial number.

To initiate an upload, simply insert a compatible SD card into the socket on the side of Q-Scan counter.

This will upload all the data from the **Last Upload** date to today. This date is updated every time data for a day is uploaded but can be set manually in the *SD Card Menu* found in the *Settings Menu*.

Do not remove the SD card while an upload is in progress, until told to do so. If you wish to cancel an upload press and hold the **Back** button on the remote until it is acknowledged by the Q-Scan counter.

The result of the upload is displayed on the screen once complete.

7.2 Files/Reports

A different file is uploaded for each data type for each day, except for monthly summary data where there is one file per month.

Daily Summary
This file contains the counts summarized in 30/60 minutes intervals.

File Name
QScan\<*customer name*>\<*counter name*>*yyyy*\Month*mm <month name>**dd-mm-yyyy*.summary.txt

File Format
TwinComm - *dd/mm/yyyy<tab>hh:mm:ss<tab><in count><tab><out count>*
UniComm - *dd/mm/yyyy<tab>hh:mm:ss<tab><count>*

Events
This file contains any events - See *4.4.3 Events* for more details.

File Name
QScan\<*customer name*>\<*counter name*>*yyyy*\Month*mm <month name>**dd-mm-yyyy*.events.txt

File Format
dd/*mm*/*yyyy*<*tab*>*hh*:*mm*:*ss*<*tab*><*event type*><*tab*><*parameters*>

Counts
This file contains the individually time stamped counts.

File Name
QScan\<*customer name*>\<*counter name*>*yyyy*\Month*mm <month name>**dd-mm-yyyy*.counts.txt

File Format
TwinComm - *dd*/*mm*/*yyyy*<*tab*>*hh*:*mm*:*ss*<*tab*><IN|OUT>
UniComm - *dd*/*mm*/*yyyy*<*tab*>*hh*:*mm*:*ss*<*tab*>PASS

Month Summary
This file contains count totals for each day of the month.

File Name
QScan\<*customer name*>\<*counter name*>*yyyy*\Month*mm <month name>*\monthly.*mm-yyyy.txt*

File Format
TwinComm - *dd/mm/yyyy<tab><total in count for day><tab><total out count for day>*
UniComm - *dd/mm/yyyy<tab><total count for day>*

7.3 Q-Scan Data Downloader

If you have purchased the Q-Scan Data Downloader software it can be used to extract specific data from the SD card and save it to a single file e.g. Daily summary data for a specified date range.

See *6 Q-Scan Data Downloader* for more details.

7.4 FAQ

Q) I get the message *"The physical drive is write protected"* on the screen when I insert the SD card.

A) The SD card is write protected and cannot be written to. You can make it writable by moving the *Lock* switch on the side of the SD card to the up position.

Q) I get the message *"There is no valid FAT volume"* on the screen when I insert the SD card.

A) The SD card does not use the FAT32 file system. If you want to use this SD card then you need to format the card and select FAT32 as the file system.

WARNING: Formatting an SD card will cause it to lose any data currently on it.

Notes:

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Q-SCAN

Beam Counters

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